Watershed Protection: A Statewide Approach
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Chapter 4. Getting Started

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For most state agencies, switching from program-centered to watershed-centered management involves a fundamental change that will prompt intense scrutiny by staff and administrators. Although such a shift involves changes in *functional relationships* among individuals and programs, it does not necessarily require a change in *organizational structure.* Nonetheless, a significant investment of time is needed to resolve such issues. The use of skilled, outside facilitators can be helpful in effecting change in a timely fashion, but is not always necessary.

The process is unique to each state (see highlights below). However, experience shows that most States face several key challenges:

- Establishing a common direction
- Managing the transition
- Identifying barriers
- Documenting the approach.

These challenges and some ways to address them are described in the following sections. EPA understands that this is not the only way a state can adopt a basin approach. Rather, the information below suggests themes and techniques that have proven useful in several states to date.

4.1 Establishing a Common Direction

Agencies and programs involved in watershed protection are likely to have different perspectives and goals. Successful development depends on strong leadership and support from each participating program. Agency and program staff often want a clear direction and specific mandate before agreeing to participate. This "buy-in" to the approach generally requires a demonstration of long-term commitment by program administrators.

Implementing Statewide Approaches in Delaware and Texas

In Delaware, managers from two separate divisions within the state's Department of Natural Resources and Environmental Control recognized the limitations of operating nonintegrated programs. These managers brought together their staffs and representatives from several other agencies. Through a series of workshops and workgroups, they are developing a core program to integrate the activities of the Division of Water Resources programs (i.e., surface water, ground water, wetlands) with the activities of the Division of Soil and Water Conservation Programs (i.e., NPS management, coastal zone management, sediment, and stormwater).

The State of Texas initiated a process after a Division Director brought the approach to the attention of both the Deputy Executive Director and Chairman of the Texas Natural Resources and Conservation Commission. These top-level administrators, in turn, have instituted an agency-wide review for application of the approach to all programs. A series of educational and discussion sessions led to the establishment of internal workgroups to address preliminary issues and provide the foundation for development of a basin approach.

Administrators can demonstrate their commitment by developing a mission statement that supports the concept of basin- or watershed-centered management. Meetings can be held with staff and managers to develop consensus regarding goals and objectives. The expected products (e.g., basin plans, technical references) and services (e.g., assessment, planning, outreach) should be specified from the outset.

4.2 Managing the Transition

State agency staff and other stakeholders will be very interested in how the operation of programs will change to accommodate watershed management. Several steps can be taken to assure stakeholders that a smooth transition can be accomplished.

- Determine who will direct development:

  Planning all the details of basin schedules, stakeholder responsibilities, monitoring plans and other activities is a significant effort. To lead this effort, it is important to have a knowledgeable person with strong communication and organizational skills. The leader may select a core group of contacts throughout the stakeholder agencies to advise and act on process issues. The leader should communicate the anticipated process for development to all participants.

- Establish a resource base for development:

  Developing a watershed approach will require an expenditure of staff time to plan, document and implement the approach. Therefore, it is helpful to determine, up front, the

availability of staff resources. Other resources such as federal assistance or outside contracting services can be explored.

- Educate participants on statewide management.
- Educate all staff likely to be involved in the process on the fundamental concepts.
- Establish a means of communication among participants:

Given the significance of the process, agencies should not rely on information to trickle down through supervisors to staff; a network is recommended that reaches all participants directly. Effective methods include newsletters, an electronic bulletin board system, and staff briefings.

4.3 Documenting the Approach

The lead agency should prepare a document that describes the approach for that state. This document, often referred to as the framework document (see Figure 1-3), should include the overall goals and objectives for participating agencies, a definition of the management units for the state, the basin cycle schedule, procedures for developing basin plans, roles and responsibilities of participating programs and agencies, targeting criteria and procedures, and guidelines for public involvement. The framework document serves as a written reference for staff to ensure consistency of application and quality of results. The document also often serves to communicate to the public what the approach involves and how they can better participate in the process.

Figure 4-1 is an outline for a framework document that contains features common to several states. The next highlight presents some of the issues being addressed by the Delaware Department of Natural Resources and Environmental Control in developing a framework for that state.

Executive Summary

Statewide Watershed Management Approach Vision

Long-Term Basin Management Vision

Relationship of Current Basin Approach to Vision

1. Introduction

1.1 Objectives
1.2 Rationale for Approach
1.3 Federal CWA Mandate for Approach

2. Coordination/Integration of Agency Programs/Functions

2.1 NPDES Permitting
2.2 Monitoring
2.3 Financial Planning and Grants
2.4 Water Resource Planning
2.5 Nonpoint Source Programs
2.6 Coastal Zone Management
2.7 Drinking Water
2.8 Ground Water
2.9 Fish and Wildlife

3. Transition Issues and Solutions

3.1 EPA Flexibility
3.2 Organizational Structure
3.3 Coordination with Local Planning Agencies
3.4 Basin Scheduling Process
3.5 Other Issues

4. Major Components of a Basin Management Plan

5. Procedures for Developing Basin Management Plans

6. Statewide Monitoring Plan

7. Data Analysis, Modeling, Presentation (TMDLs)

8. State Financial Assistance

9. Roles and Responsibilities in Basin Approach

9.1 Surface and Ground Water Quality
9.2 Soil and Water Resources
9.3 Other Divisions

10. Implementation Schedule

11. Data Management

11.1 GIS
11.2 Existing Data Management Structures
11.3 Recommended Data Management Structures

Figure 4.1. Example framework document outline.

Key Issues Addressed by Delaware in Developing a Basin Management Framework

- A primary goal in Delaware is to restore and preserve physical habitat that is essential to waterbody integrity.
- The Division of Water Resources will phase-in coordination with other divisions and agencies. The consensus strategy recommended that the Division take the lead in the early phases of development and implementation. This will provide the program with a base of CWA authority and precedence. However, the program description includes a definition of water quality inclusive of biological resources, physical habitat, and watershed linkages to ensure that the Division's approach is consistent with the goals and objectives of programs and agencies that will be partners in subsequent phases. The Delaware approach will ultimately include many of the natural resource programs including the Fish and Wildlife Division, the Parks and Recreation Division, and county planning authorities.
- A statewide monitoring program addresses targeted needs for individual basins (e.g., rotating stations and intensive surveys) and maintenance of a statewide network for monitoring water quality status and trends.
- Transition issues raised in Delaware will require solutions. They include EPA flexibility, workload planning, coordination with local planning agencies, and scheduling basin rotation. Delaware is working actively with EPA Region 3 to make grant funding schedules and requirements more consistent.
- The process for funding through the traditional State Financial Assistance process presented an institutional barrier for implementation. Alternatives involving a geographically targeted risk-based approach are discussed in the framework document.
- Changes to current information management practices are also necessary. Information management is an important issue for most states, especially because the WPA focuses more attention on environmental assessment and involves information from a larger number of data sources.

(see also Delaware Department of Natural Resources and Environmental Control, 1994)

4.4 Identifying Barriers

State agency policies or even individuals may pose obstacles to developing a basin approach. For example, an agency policy or regulation may have provisions contrary to the proposed approach or a key individual may fail to participate in the development process. There may also be staff resistance if organizational changes are necessary to implement the approach. Because the approach encourages direct networking among technical experts in different program areas, some supervisors may have difficulty with the changing supervisor/staff relationship. For example, biologists and engineers might need to work more directly with their peers in other agencies.

To identify concerns and risks of switching to a basin approach, some states have used a workshop setting and outside facilitators who have no vested interest in the approach selected. Positive outcomes may include reduced level of concern and new ideas for resolving issues.

Workshops and workgroups are especially useful for issues that can be resolved in a relatively short time. Involving a skilled and impartial facilitator can also help mediate difficult, long-term issues.

To identify potential impacts to agencies, it may be helpful for states to consider the following questions:

- Will organizational changes be necessary?
- How will changes in methods affect staff and training?
- Are additional resources needed?
- How will the state's relationship with EPA/other agencies be affected?

Once a basin approach has been established, educating the public is critical to building support for the approach. Potential methods include briefing state and local agencies, commissions, and special interest groups about the process and what roles they can play. This important step may be difficult for states to accomplish when so much staff energy is going into developing the basin approach.

4.5 Tailoring the Approach

Once issues of direction and administration have been resolved, a state is ready to develop an approach that will best meet its needs and objectives. Answers to the following questions will guide this effort.

- What are the appropriate management units (i.e., basins and watersheds) to be used by all participants?

  As discussed in Chapter 2, basin boundaries should be established as a baseline for all participants in the management process. Too few basin units can result in large, cumbersome basin plans, and too many management units may lead to overwhelming numbers of basin plans.

- In what sequence should those management units be addressed and over what time cycle?

  Factors to consider when determining length of the cycle and basin sequence include:

  Resource constraints -- available staff and funding may determine length of the statewide cycle and where management strategies are feasible

  Balancing workload from year to year (e.g., in permit development, TMDL development, monitoring, and basin plan writing and updating)

  Level of activity in a basin -- a state may want to begin with basins where substantial information and management tools are already available

Anticipated degree of public involvement -- a state may prefer to address first those basins with a high degree of public interest and willingness to implement management initiatives

- Which programs should be involved?

Decide which programs should be integrated (e.g., surface water, groundwater, drinking water, wetlands, agricultural runoff control programs). Some states may choose to initiate a basin approach that incorporates only a few programs and plan to incorporate other programs once some success has been demonstrated. Permits or monitoring may be the first programs included due to the expected substantial gains in efficiency from coordinating these activities within a basin management cycle. Other states may choose to initiate an approach that includes all water quality programs. See the next highlight regarding the integration of Massachusetts' drinking water protection program with its basin approach to resource management.

In making its determination of which programs to include, a state may find it useful to list in detail the tasks required to implement basin management (e.g., data collection, data analysis and assessment, priority setting, TMDL development, public participation, plan preparation and adoption, permitting, and other elements). Roles and responsibilities can then be identified for completing these key tasks, thereby identifying the programs and stakeholders that need to be involved.

Comprehensive Source Water Protection in Massachusetts

EPA is actively promoting development of CSGWPPs. Massachusetts is currently working to develop a CSGWPP aimed at integrating protection of both surface water and ground water sources of drinking water using EPA's CSGWPP Guidance as a model. Through this process, the state has begun to identify inconsistencies and gaps in the protection programs for both ground and surface water-based drinking water supplies and to develop recommendations and actions necessary to address those deficiencies.

A critical part of Massachusetts' current effort is the integration of the state's drinking water protection program with its river basin approach to resource management. With development of its Clean Water Strategy in 1993, the state started synchronizing functions within each basin that had previously been carried out in isolation within discreet water protection programs: water quality monitoring; water withdrawal permitting (new wells); mitigation and remediation of nonpoint sources of pollution; and permitting under NPDES. Each of these activities impacts drinking water supplies as well as other waters of the state in some way, and drinking water supplies are critical resources to be protected in each basin. The state's strategy is ultimately to combine ground water and surface water protection program efforts into a unified Source Water Protection Program which will provide protection for all sources of drinking water throughout Massachusetts.

Specific issues to be addressed during development of its Source Water Protection Program include: (a) defining surface water protection areas for reservoirs and river intakes of varying

sizes and types and identifying appropriate land use restrictions in those protection areas; (b) alleviating problems resulting from highway runoff to surface water supplies; and (c) developing a policy for disposal of water supply-generated sludge in drinking water protection areas. Additional opportunities for integration of drinking water protection into the state's basin approach will be identified as the program is developed further.

- What are the desired levels and methods of public participation?

  Determine how and to what degree the public will be involved in the process. Potential areas for participation include:
  -- Data and information collection
  -- Prioritization of problem waterbodies
  -- Development of management strategies
  -- Review of management plans and implementation strategies
  -- Plan implementation (e.g., by NPS agencies and local governments)

  Determine whether the public will have open access to the participating agencies at all times or be limited to specific "windows of opportunity". Also, states should establish which mechanisms of access will be most efficient and effective for both the agencies and the public.

- What interactions among programs are key to effective implementation of the approach?

  Identify programs that are affected by products or services from other programs, but are not currently interacting at the most effective level. Some agencies have found it useful to develop a matrix of agency program units and the required elements of the basin process. Such a matrix can help identify redundancies and ineffective interactions among programs.

- How should program activities be scheduled within the basin cycle to ensure coordination?

  Work with stakeholders to establish a schedule for key task completion that corresponds to the overall basin management cycle. States should then identify interim products that will be integral to the plan's preparation (e.g., monitoring summaries, analyses, and assessments) and establish the format in which they should be produced and the schedule by which they should be completed. It is particularly important to identify those products that one program area must receive from another before work can proceed, since bottlenecks can affect basin plan preparation and implementation. Often, the review/revision of interim products is necessary before they can be used in the next steps of planning.

  Appendix B shows a detailed schedule of activities for Nebraska.

To date, nearly all states that have adopted basin approaches (or are moving that way) are synchronizing NPDES permit expiration dates with the basin management time cycle.

Since the permit program is such a large part of a state's water quality agency, synchronizing permits makes it easier for this activity to be integrated with other components (planning, monitoring, etc.). In fact, increased permitting efficiency was the initial reason that several States such as South Carolina adopted a basin approach. However, a state could choose to bring other programs into the cycle and let permit issuance remain on its own schedule, incorporating permits into the basin plans.

If permitting is synchronized with the basin management cycle, it is recommended that permits expire shortly after the scheduled basin plan adoption date so that plan recommendations can be incorporated into the permits and results can be tracked prior to the next basin plan update. For large basins with many NPDES dischargers, permits may need to be issued over a longer period of time to spread out the workload for agency permitting staff. Permittees can be grouped by sub-basin in this case so that consistency and efficiency factors (e.g., consolidation of public notices and hearings) can be maintained.

- What criteria will be used to prioritize specific waterbodies and watersheds within basins for management action, and how will agency resources be targeted to address specific concerns within those prioritized waterbodies?

In light of resource constraints, participating programs will need to establish criteria to prioritize waterbody segments, watersheds, pollutants of concern, etc., for effective management. Because objectives may differ across programs, it is useful to make prioritization criteria explicit so that program involvement remains efficient and consistent. See Section 2.6.

- What resource or technical support needs must be addressed before the approach can be implemented?

Determine the specific needs of participating programs for implementation (e.g., information management systems, GIS, and modeling capabilities).

- How will basin plans be used?

Establish the intended audience(s) and purpose(s) of your basin plan, identify the level of plan approval that will be required, and outline the anticipated components of a basin plan. See the highlight concerning Nebraska's decisions about the role of basin plans.

The Role of Basin Plans in Nebraska

The Nebraska Department of Environmental Quality (NDEQ) recently held a workshop to reach consensus on the required level of approval, purpose, and audience for basin plans, with the following results:

Level of Approval

- *Long Range* -- plans should be officially adopted as CWA Section 303(e) plans, which require signature of the Governor and approval by EPA.
- *Short Range* -- initial plans should be prepared for approval by the Water Quality Division Director.

Audience and Purpose

- NDEQ -- provide for coordination and direction of programs
- Natural Resource Districts -- provide for information transfer; raise awareness; assist coordination and implementation
- Other state and federal agencies -- inform; direct activities and plan implementation
- Regulated community -- raise awareness of process; communicate reasons for effluent limitations (education tool); aid long-range planning
- Legislature -- communicate; raise awareness of process and resource needs/legislative needs
- General public -- increase awareness of process; improve perception; facilitate participation; help direct citizen monitoring efforts
- EPA -- address program plan requirements; expedite required approvals; indicate resource needs; aid in program coordination/implementation
- Special interest groups (e.g., power utilities, agricultural industries, environmental groups) --raise awareness of process; improve perception; facilitate participation; help direct special monitoring efforts.

- Once implemented, how will the basin approach and its component programs be administered?

  It may be helpful for states to review operating agreements or state programs supported by federal funds to identify areas where revisions or consolidation are needed. Multiple grants often result in complex administrative burdens. Consultation with EPA and other participating federal agencies may result in possibilities for block grants or other mechanisms to encourage program integration. Where feasible, program plans should be revised to support implementation. Also, new interagency memoranda of understanding may be needed.